

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 1-20 are present in this application. Under 35 U.S.C. § 103(a), claims 1-5, 10, 14, 18 and 19 are rejected over JP 2002-003091 (Uetake et al.) in view of U.S. 4,629,035 (Tanahashi et al.) and claims 15-17 and 20 are rejected over Uetake et al. in view of Tanahashi et al. and further in view of U.S. 4,658,935 (Holland). Claims 6-9 and 11-13 are withdrawn from consideration.

The claims of the present application are directed to an elevator controller and a method of operating an elevator operating system. In the elevator controller, a main control unit controls running of an elevator, calculates a predicted temperature state of a predetermined component of the elevator, compares a predicted temperature state to a range of permitted temperature states, and changes at least one of a plurality of elevator travel parameters if the predicted temperature state is outside of the range. The main control unit performs operation control of the component of the elevator based upon results of the comparison. It is important to note that the calculation is a predicted temperature state and not an actual measured or detected state. The controller according to claim 1 predicts that the temperature state of a component may exceed a range of permitted temperature states, and takes corrective action in order to avoid the temperature of the component from being outside of the range of permitted temperature states. This is in contrast to a control system which measures the temperature of a component and then takes corrective action if the measured state is beyond a threshold.

In the controller of claim 1, undesirable temperature states can be avoided by predicting when the temperature state will be outside of a permitted range of temperature states. Corrective action is taken, so that the elevator operating efficiency can be impacted

less than the case where more disruptive corrective action must be taken once the detected temperature of a component is outside of the temperature range.

Uetake et al. discloses an elevator controller where the temperature state is detected and if the temperature exceeds a threshold, a running pattern may be changed such as to lighten the load or lower acceleration rates to reduce the generation of heat so that the temperature of the apparatus will not reach the state where the controller would stop the operation of the elevator. In other words, Uetake et al. sets a lower threshold level where corrective action is taken lower than a threshold level where stopping the operation of the elevator would be carried out. There is nothing in Uetake et al. of predicting whether the temperature of a component will go outside of a permitted range. Uetake et al. is based upon detecting a temperature of a component and taking action if that temperature exceeds a level. The level is one where the run characteristics may be altered to reduce the temperature, but there is still the basic concept of detecting temperature and taking action if the temperature exceeds a certain threshold. In other words, Uetake et al. waits until the threshold is exceeded rather than predicting whether the threshold would be exceeded.

The system of claim 1 predicts the temperature state of a predetermined component and performs operation control based upon a comparison of whether a predicted temperature state is outside of a predetermined temperature state. Uetake et al. neither calculates any predicted temperature nor compares any predicted temperature to a range of permitted temperature states. Clearly, the elevator controller of claim 1 is not disclosed or suggested by Uetake et al.

The Office Action finds that Uetake et al. only fails to disclose that the predetermined state is a range of temperature states. However, even if Uetake et al. were modified to compare the detected temperature state to a range of states, there is still no prediction of a temperature state of a predetermined component, or any comparison of a predicted

temperature state to a range of permitted temperature states. Uetake et al. only compares a detected state to a threshold in order to determine whether to take corrective action upon exceeding the threshold. Uetake et al. simply uses a lower threshold to determine when corrective action need take place before a stop operation is executed without any suggestion of predicting if the threshold may be exceeded.

The combination of Uetake et al. and Tanahashi et al. does not disclose or suggest the elevator controller of claim 1 because neither reference has a control unit which calculates a predicted temperature state, compares a predicted temperature state to a range of permitted temperature states, or performs any operational control based upon a comparison of a predicted temperature state and a range of permitted temperature states. Claim 1 is therefore clearly patentable over a combination of Uetake et al. and Tanahashi et al.

Holland is cited for disclosing a selector system which determines a plurality of sets of elevator travel parameters and selects travel parameters based upon a comparison of one of the parameters in the sets. However, even if such teachings could be combined with Uetake et al. and Tanahashi et al., the combination would still be deficient as described above. Namely, none of the references discloses calculating a predicted temperature state of a predetermined component or comparing a predicted temperature state to a range of permitted temperature states. Claim 1 is also patentable over a combination of Uetake et al., Tanahashi et al. and Holland.

Claim 18 recites calculating a predicted temperature state of a component of a drive system, comparing the predicted temperature state to a range of permitted temperature states and changing at least one of a plurality of elevator travel parameters if the predicted temperature state is outside of the range. The component of the drive system is controlled based upon a result of the comparison. Referring to the above discussion of Uetake et al., there is clearly no calculating of a predicted temperature state of a component, as Uetake et

al. only detects the temperature of a component and compares that temperature to a value to determine whether to take corrective action. Uetake et al. detects and waits rather than predicts. Tanahashi et al. and Holland, as discussed above, also do not disclose or suggest calculating a predicted temperature state, comparing a predicted temperature state, changing at least one of a plurality of elevator travel parameters, and controlling the component of the drive system as recited in claim 18. Claim 18 is also patentable over any combination of Uetake et al., Tanahashi et al., and Holland.

It is respectfully submitted that the present application is in condition for allowance, and a favorable action to that effect is respectfully requested.

Respectfully submitted,

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